Haemophilus influenzae, Invasive
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Haemophilus Influenzae Invasive Disease Including Meningitis

Overview[1,2]

For a more complete description of *Haemophilus influenzae (HI),* refer to the following texts:

- Control of Communicable Diseases Manual (CCDM), *Haemophilus Meningitis* section.
- Red Book, Report of the Committee on Infectious Diseases.

Case Definition[3]

Clinical description

Invasive disease due to *Haemophilus influenzae* may produce any of several clinical syndromes, including meningitis, bacteremia, epiglottitis, or pneumonia.

Laboratory criteria for diagnosis

- Isolation of *H. influenzae* from a normally sterile site (e.g., blood or cerebrospinal fluid (CSF) or, less commonly, joint, pleural, or pericardial fluid).

Case classification

Confirmed: a clinically compatible illness that is culture confirmed

*Probable***:** a clinically compatible illness with detection of a *H. influenzae* type b antigen in CSF.

Comment

Positive antigen test results from urine or serum samples are unreliable for diagnosis of *H. influenzae* disease.

Information Needed for Investigation

Verify clinical diagnosis, but do not wait for confirmation by culture to administer chemoprophylaxis. What laboratory tests were conducted? What were the results? What are the patient's clinical symptoms?

Establish the extent of illness. Determine if household or other close contacts are, or have been, ill by contacting the health care provider, patient or family member.

Contact the District Communicable Disease Coordinator if an outbreak is suspected, or if cases are in high-risk settings such as child care, health care, or unvaccinated child populations.

Contact the Bureau of Child Care when case(s) are associated with a child care facility.

Contact the District Immunization Representative if the *H. influenzae* case is <15 years of age. It is extremely important that all (HI) isolates from this age group be serotyped because only type b is potentially vaccine preventable. In addition, children <24 months may not

develop protective antibody after invasive (HI) disease and should receive Hib vaccine as recommended in the schedule.[5]

Case/Contact Follow Up And Control Measures

Determine the source of infection.

- Identify household, child care, and other intimate contacts for chemoprophylaxis.
- Obtain demographic information and vaccination status on all cases and high-risk contacts.
- Obtain the diagnosis, which can be any of the following: bacterial meningitis, epiglottitis, sepsis, cellulitis, septic arthritis, osteomyelitis, pericarditis, or pneumonia.
- Do not wait for the serotype results to be obtained. Begin appropriate chemoprophylaxis immediately.
- Ensure that each case and all high-risk contacts have received appropriate therapy, chemoprophylaxis, and Hib vaccine if indicated.

Control Measures

See the *Haemophilus influenzae* type b section of the Epidemiology and Prevention of Vaccine-Preventable Diseases 7th ed. Centers for Disease Control and Prevention 2002.

See the *Haemophilus influenzae* section of the 2000 Red Book.

ACIP-Recommended Hib Routine Vaccination Schedule[5]

Vaccine	2 Months	4 Months	6 Months	12–15 Months
HbOC	Dose 1	Dose 2	Dose 3	Booster
PRP-T	Dose 1	Dose 2	Dose 3	Booster
PRP-OMP	Dose 1	Dose 2	--	Booster

HbOC – (HibTITER)
PRP-T – (ActHIB)
PRP-OMP- (PedvaxHIB)

All 3 conjugate Hib vaccines licensed for use in infants are interchangeable.

Children <24 months of age who develop Hib disease should be considered unimmunized and receive Hib vaccine as recommended in the schedule.

In general, children >59 months of age do **not** need Hib vaccination.

Detailed Vaccination Schedule for Hib Conjugate Vaccines[5]

Vaccine	Age at 1st Dose Months	Primary Series	Booster
HbOC/PRP-T	2-6	3 doses, 2 months apart	12-15 months*
	7-11	2 doses, 2 months apart	12-15 months*
	12-14	1 dose	2 months later
	15-59	1 dose	--
PRP-OMP	2-6	2 doses, 2 months apart	12-15 months*
	7-11	2 doses, 2 months apart	12-15 months*
	12-14	1 dose	2 months later
	15-59	1 dose	--
PRP-D	15-59	1 dose	--

* At least 2 months after previous dose.

Hib Vaccination Schedule for Children with Lapsed Series (from AAP Red Book)[5]

Current Age (Months)	Prior Vaccination Hx	Recommended Regimen
7-11	1 dose	1 dose at 7-11 mos, booster at least 2 mos later at 12-15 mos
7-11	2 doses of HbOC or PRP-T	Same as above
12-14	2 doses before 12 mos	1 dose of any licensed conjugate
12-14	1 dose before 12 mos	2 dose of any licensed conjugate separated by 2 mos
15-59	Any incomplete schedule	1 dose of any licensed conjugate

Precautions[5]:

a) Vaccination with Hib conjugate vaccine is contraindicated in persons known to have experienced analphylaxis following a prior dose of that vaccine.
b) Vaccination should be delayed in children with moderate or severe illnesses.
c) Hib vaccines, including combination vaccines that contain Hib conjugate, should never be given to a child younger than 6 weeks of age.

General Guidelines For Chemoprophylaxis:

- For purposes of chemoprophylaxis, invasive (HI) disease will be considered to be all forms of (HI) disease except:
  - Otitis media without sepsis, or
  - Positive nasopharyngeal, throat, or sputum culture without sepsis.

Rifampin prophylaxis

The recommended dose is 20 mg/kg as a single dose (maximal daily dose 600 mg) for 4 days. Neonates (<1 month of age) should receive 10 mg/kg once daily for 4 days.

- **Rifampin prophylaxis is contraindicated in pregnant women**.

A child is considered fully immunized against Hib disease following[5]:

a) At least one dose of conjugate vaccine at 15 months of age;
b) Two doses of conjugate vaccine at 12-14 months of age; or
c) Two or more doses of conjugate vaccine at <12 months of age, followed by a booster dose at 12 months of age.

Household contacts[2,5]

Chemoprophylaxis is **not** recommended for occupants of households:

a) When all household contacts are ≥ 4 years, (excluding the index case) or,
b) When all household contacts <4 years are fully immunized against Hib disease.

Chemoprophylaxis **is** recommended for all occupants of the household):

a) If one or more of the household occupants are infants <12 months of age (regardless of vaccination status).
b) If one or more of the household contacts are <4 years and are inadequately vaccinated.
c) If one or more of the household contacts is an immunocompromised child, regardless of age, irrespective of immunization status.
d) The index case should be treated with the same rifampin regimen before discharge from the hospital, since antimicrobials used to treat invasive disease do not reliably eradicate carriage.

Child care contacts[2,5,6]

The use of rifampin in **child care classrooms** is controversial. Most studies seem to suggest that child care contacts are at relatively low risk for secondary transmission of Hib disease. There is evidence that Hib vaccine decreases the rate of carriage of Hib among vaccinated children, therefore decreasing the chance that unvaccinated children will be exposed.

If a case of (HI) disease occurs in day care classrooms, and if any children <2 years of age have been exposed, and are unimmunized or incompletely immunized:

a) All parents should be notified.
When a day care center or nursery school is involved, send a letter to parents, physicians, and emergency rooms in the area alerting them to the occurrence of a case of *Haemophilus influenzae* invasive disease in the community. Sample letters, fact sheets and information about rifampin are located at the back of this manual section.

b) Educate parents and day care staff on the need for prompt medical evaluation and treatment if fever or stiff neck develops in a child.

c) All unimmunized or incompletely immunized children in the child care facility should receive a dose of vaccine and should be scheduled for completion of the recommended age specific immunization schedule.

d) All members of the classroom, students (regardless of age or vaccine status) to include those unexposed or enrolled in the classroom after the case-patient's illness and staff should receive rifampin prophylaxis according to the above regimen.

e) Prophylaxis is most likely to be effective if given to all members of the classroom at the same time.

f) Rifampin prophylaxis should be instituted as rapidly as possible (preferably within 24 hours). If more than 14 days have passed since the last contact with the index case, the benefit of rifampin prophylaxis is likely to be decreased.[5]

If a case of (HI) disease occurs in day care classroom, and if all exposed children are ≥2 years of age:

a) All parents should be notified.
When a day care center or nursery school is involved, send a letter to parents, physicians, and emergency rooms in the area alerting them to the occurrence of a case of *Haemophilus influenzae* invasive disease in the community. Sample letters and fact sheets are located at the back of this manual section.

b) Educate parents and day care staff on the need for prompt medical evaluation and treatment if fever or stiff neck develops in a child.

c) All unimmunized or incompletely immunized children in the child care facility should receive a dose of vaccine and should be scheduled for completion of the recommended age specific immunization schedule.

When 2 or more cases of invasive (HI) disease have occurred within 60 days and unimmunized or incompletely immunized children attend the facility.

a) All parents should be notified.
When a day care center or nursery school is involved, send a letter to parents, physicians, and emergency rooms in the area alerting them to the occurrence of a case of *Haemophilus influenzae* invasive disease in the community. Sample letters, fact sheets and information about rifampin are located at the back of this manual section.
b) Educate parents and day care staff on the need for prompt medical evaluation and treatment if fever or stiff neck develops.
c) All unimmunized or incompletely immunized children in the child care facility should receive a dose of vaccine and should be scheduled for completion of the recommended age specific immunization schedule.
d) **Administration of rifampin to all attendees and staff is indicated**.
e) Prophylaxis is most likely to be effective if given to all children at the same time.
f) Rifampin prophylaxis should be instituted as rapidly as possible (preferably within 24 hours). If more than 14 days have passed since the last contact with the index case, the benefit of rifampin prophylaxis is likely to be decreased.**(5)**

Recommendations regarding enrollment of new children at a facility after a case of invasive (HI) disease has occurred:

a) Children who are eligible for vaccine should have had at least one dose of H. influenzae type b conjugate vaccine before attending the facility.
b) If rifampin prophylaxis is to be given, new children who will be assigned to a classroom where there was a case, or a facility receiving mass prophylaxis, the child should wait to attend the facility until prophylactic treatment is completed.

Guidelines for the use rifampin provided by the Missouri Department of Health & Senior Services (DHSS) are as follows:

1. Rifampin prophylaxis should be initiated as rapidly as possible, preferably within 24 hours. If more than 14 days have passed since last contact with the index case, the benefit of rifampin is likely to be decreased.(5)
2. If the family can pay for the rifampin or if the family has insurance that will pay (including Medicaid), then one of these sources should pay the cost. If the family does not have a source of financial assistance as described above, then the Missouri Department of Health and Senior Services (DHSS) will provide the rifampin free-of-charge.
3. In the event that a child care center, child care home, nursery school, or other group setting such as a boarding school or institution is involved, the DHSS will assure access to rifampin prophylaxis.

4. Arrangements must be made locally for a physician to prescribe and a pharmacist to dispense rifampin. In the event that the prescriptions cannot be written locally, contact the District Communicable Disease Coordinator or the Section of Communicable Disease Control and Veterinary Public Health. The DHSS will pay up to $3.00 per prescription for rifampin dispensed by the pharmacy for **authorized** prescriptions.
5. The DHSS will supply the rifampin or will replace the pharmacy's supply of rifampin used to fill **authorized** prescriptions. Contact the District Communicable Disease Coordinator to obtain replacement rifampin.
6. In order to receive payment, the pharmacy must submit a bill to the district health office (or the local public health agency, which can then forward it to the district health office). The bill must include the pharmacy's name, address, number of clients receiving **authorized** rifampin prescriptions, and the total amount requested. A list of names of those persons receiving rifampin must be attached to the bill.
7. Once a bottle of rifampin has been opened, it becomes the property of the pharmacy. Unopened bottles should be retrieved from the pharmacy and/or the local public health agency and returned to the district health office for future use.
8. Physicians or health care establishments may wish to provide prophylaxis for persons not meeting qualifying criteria. The DHSS is unable to provide rifampin free-of-charge unless prophylaxis guidelines are met.

Laboratory Procedures

The organism can be isolated from blood, CSF, joint, pleural, or pericardial fluid.
All *H. influenzae*, invasive disease isolates should be sent to the Missouri State Public Health Laboratory for confirmation or typing. The Missouri State Public Health Laboratory only accepts isolates from sterile sites.

Reporting Requirements

Haemophilus influenzae Invasive Disease, including meningitis is a Category I disease and shall be reported to the local health authority or to the DHSS within 24 hours of first knowledge or suspicion by telephone, facsimile or other rapid communication.

1. For confirmed and probable cases complete a "Disease Case Report" (CD-1), and a "Record of Investigation of Bacterial Meningitis or Bacteremia Case Report" (CD-2M) revised 7/02 (Please do not detach patient identifier information when submitting the form to DHSS).
2. Entry of the complete CD-1 into the MOHSIS database negates the need for the paper CD-1 to be forwarded to the District Health Office.
3. Send the completed secondary investigation form to the District Health Office.
4. All outbreaks or "suspected" outbreaks must be reported as soon as possible (by phone, fax or e-mail) to the District Communicable Disease Coordinator. This can be accomplished by completing the Missouri Outbreak Surveillance Report (CD-51).

5. Within 90 days from the conclusion of an outbreak, submit the final outbreak report to the District Communicable Disease Coordinator.

References

1. Chin, James ed. "Acute Bacterial Conjunctivitis." and "Haemophilus Meningitis." and "Other Pneumonias." Control of Communicable Diseases Manual, 17th ed. Washington, D.C.: American Public Health Association, 2000: 119-121, 345-347, and 398.
2. American Academy of Pediatrics. "Haemophilus influenza infections". In: Pickering, LK, ed. 2000 Red Book*:* Report of the Committee on Infectious Diseases*.* 25th ed. Elk Grove Village, IL. 2000: 262-272.
3. Centers for Disease Control and Prevention. Case Definitions for Infectious Conditions Under Public Health Surveillance. MMWR 1997:46 (No.RR-10): 15.
4. ACIP. Supplementary chart: Recommended Childhood Immunization Schedule, United States, January-December 1998. Approved by the Advisory Committee on Immunization Practices (ACIP), the American Academy of Pediatrics (AAP), and the American Academy of Family Physicians (AAFP).
5. W. Atkinson, C. Wolfe, (Eds.) "Haemophilus influenza type b." Epidemiology and Prevention of Vaccine-Preventable Diseases 7th ed. Centers for Disease Control and Prevention 2002. 83 - 95
6. Donowitz, Infection Control in the Child Care Center and Preschool, 4th Edition, 1999: pages 149-155.

Other Sources of Information

1. Ward, Joel I. and Constance M. Vadheim. "*Haemophilus influenzae*." Bacterial Infections of Humans Epidemiology and Control, 3rd ed. Eds. Alfred S. Evans and Philip S. Brachman. New York: Plenum, 1998: 305-336.
2. The Blue Book: Guidelines for the Control of Infectious Diseases: "*Haemophilus influenzae* Infections," 1 December 1997, http://hna.ffh.vic.gov.au/phb/hprot/inf_dis/bluebook/hib.htm (18 June 2002)

Haemophilus Influenzae Type b (Hib)
Fact Sheet

What is Haemophilus influenza type b (Hib) disease?
Until recently, Hib was one of the most important causes of serious bacterial infection in young children. Because of the new Hib vaccines, fewer cases of this disease are seen. Hib can cause several diseases such as meningitis (inflammation of the coverings of the spinal column and brain), blood stream infections, pneumonia, arthritis and infections of other parts of the body.

Who gets Hib disease?
Hib disease is most common in unvaccinated children under three years of age.

How is Hib disease spread?
Hib disease may be spread from person to person through contact with mucus or droplets from the nose and throat of an infected person.

What are the symptoms of Hib disease?
Symptoms may include fever, nausea and vomiting. Other symptoms depend upon the part of the body affected.

How soon do symptoms appear?
The incubation period for Hib disease is unknown and widely variable.

When and for how long is a person able to spread Hib disease?
The contagious period varies. If the person is not treated, it may last for as long as the bacteria is present in the nose and throat, even after symptoms have disappeared.

Does past infection with Hib disease make a person immune?
No. Children who have had Hib disease are at risk of getting it again.

What is the treatment for Hib disease?
Antibiotics are used to treat Hib infections. Rifampin is used to treat people who have had close, prolonged contact with a person with Hib disease.

PRECAUTIONARY NOTATION:

Important information associated with rifampin usage for preventive treatment of contacts can be found in the following Department of Health and Senior Service's fact sheet titled: "Important Information about Rifampin For Prevention of Hib disease".

What are the possible complications of Hib disease?

Hib disease can appear in several forms. The most common is meningitis. Some children with meningitis may have long-lasting neurological problems. In some cases, death may occur.

What can be done to prevent Hib disease?

The Immunization Practices Advisory Committee (ACIP) recommends that all infants receive Hib conjugate vaccine beginning at 2 months of age.

Missouri Department of Health and Senior Services
Section of Communicable Disease Control and Veterinary Public Health
Phone: (800) 392-0272 (573) 751-6113

Sample Letter to Parents of Exposed Children (Rifampin Recommended)

Date

To Parent of Children at

_____

Child Care Center

Dear Parent:

A child who attends the _____ child care center [in the same room as] [in close contact with] your child has been diagnosed as having [bacterial meningitis] caused by Haemophilus influenzae type b (Hib).

So that others do not get this illness, the Missouri Department of Health and Senior Services (DHSS) recommends that children [in the same room as / or in the facility]] with the child receive preventive medication. Preventive treatment will help protect your child from Hib disease and is recommended even if your child has been vaccinated with the Hib vaccine. An antibiotic called rifampin is usually used for this treatment.

Your child may also need to receive Hib vaccine if your child is not current with this immunization. Receiving the vaccine is an important intervention in that the antibiotic only provides short-term protection. A review of your child's immunization records has determined that your child {Child's name} does_____ does not_____ need to receive Hib vaccine.

NOTE: If arrangements need to be made for administration of the Hib vaccine, you will need to add a paragraph regarding this. Example:

The LPHA can provide Hib vaccine to your child. Our office hours are _____a.m./p.m. You can contact us at _____ to set up an appointment/or we will be at [Child Care Facility name] on _____ at _____a.m./p.m to administer the immunization. You will need to be present to sign the consent and receive information on the immunization.

Hib disease is rare in persons over five years of age, but all persons who were in contact with the sick child should be watched. A child who has an unusual fever or headache or any other unusual symptoms should be given immediate medical care. Meningitis may begin with an ear or sinus infection and go on to fever, vomiting, listlessness, or stiff neck. Some children with meningitis may have long-lasting neurological problems. In some cases, death may occur.

Information sheets on rifampin and Hib disease are enclosed.

If you have additional questions, please contact your physician or the _____ County Health Department at [phone number].

Sincerely,

NOTE: If arrangements have been made for rifampin prophylaxis, you will need to add a paragraph regarding this. Example:

The DHSS will provide rifampin free-of-charge for your child. You may pick up the prescription at _____ Pharmacy after ____a.m./p.m.

Sample Letter to Parents of Exposed Children (Rifampin Not Recommended)

Date

To Parent of Children at

_____

Child Care Center

Dear Parent:

A child who attends the _____ childcare center has been diagnosed as having [bacterial meningitis] caused by Haemophilus influenzae type b (Hib). The risk of other children getting Hib disease depends on the age of the exposed children, the vaccine coverage among children at the facility, and the number of cases that have occurred at the facility recently.

We are currently not recommending preventive antibiotic treatment, however we are recommending all children to be up-to-date on their Hib vaccinations.

You are encouraged to watch your child and seek medical care if a fever, headache, or other unusual symptoms occur. Meningitis may begin with an ear or sinus infection and go on to fever, vomiting, listlessness, or stiff neck. Some children with meningitis may have long-lasting neurological problems. In some cases death may occur.

An information sheet on Hib disease is enclosed. If you have additional questions, please contact your physician or the _____ County Health Department at [phone number].

Sincerely,

Sample Physician Notification Letter

Date

Doctor's Name
Address
City, State Zip Code

Dear Dr. _____:

A case of Haemophilus influenzae type b [meningitis] [invasive disease] has been diagnosed in a child at the _____name_____ child care center. Children from this child care center are being referred to their physicians for chemoprophylaxis with rifampin. We are also recommending that children be up-to-date with their Hib immunization(s). Please be alert to the presence of this disease in your community. If you have any questions, please contact your local health department, phone number.

Sincerely,

Important Information About Rifampin For Prevention of Hib Disease

Rifampin is an antibiotic. The full prescribed dosage should be taken as directed.

Contraindications:

Includes, but is not limited to:

- Rifampin is not recommended for pregnant women.
- Rifampin should not be used if there has been a previous reaction to similar antibiotics.

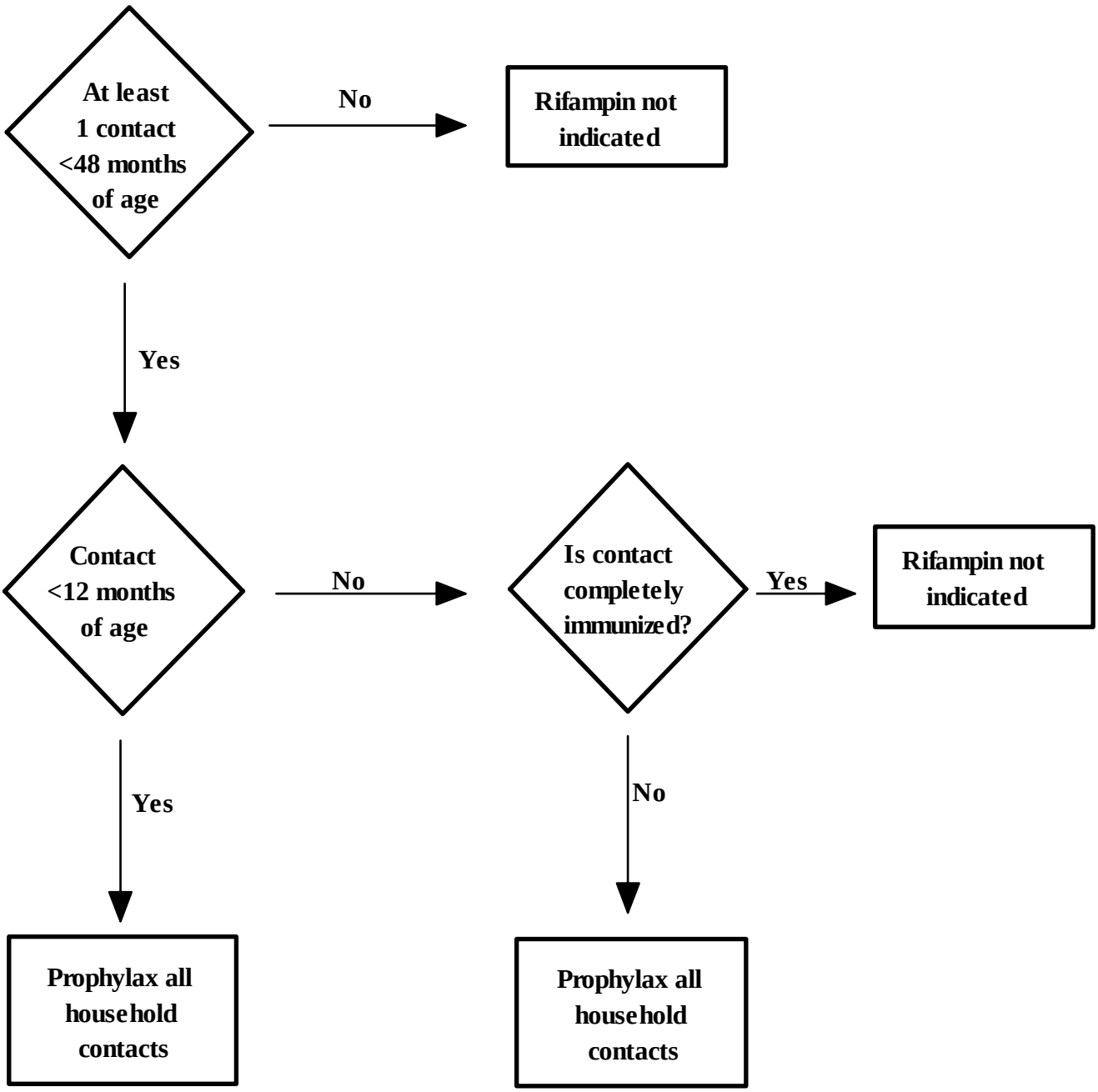
Important Facts:

- Rifampin may stain body secretions red-orange, including urine, feces, saliva, sweat and tears.
- For this reason, soft contact lenses may be permanently stained. They should not be worn while taking rifampin.
- Rifampin may reduce the effectiveness of oral contraceptives and other drugs.
- Studies have shown that Rifampin interacts with certain HIV/AIDS medications. Thus, if you are taking any prescription medications for HIV/AIDS Disease, please check with your physician prior to taking Rifampin.

Adverse Reactions:

- Rifampin may cause nausea, vomiting, cramps and diarrhea in some individuals.
- Headache, fever, drowsiness, fatigue, dizziness, mental confusion, and muscular weakness may occur.
- If any symptoms occur, please contact your physician.

H. influenzae
Rifampin Prophylaxis for Household Contacts



Dosage Calculation Guidelines for Rifampin Prophylaxis To Prevent Invasive Hib Disease

Recommended oral dosage is 20 mg/kg as a single dose once a day for 4 days. Maximum daily dose is 600 mg. Adult dose is 600 mg daily. The dose for neonates less than 1 month of age has not been established; some experts recommend lowering the dosage to 10 mg/kg once daily for 4 days[5].

Weight		Dosage		Dosage (Neonate <1 month)	
Pounds	KG	20 MG/KG	Rounded	10 MG/KG	Rounded
5	2.3	46	45	23	25
10	4.5	90	90	46	45
15	6.8	136	135	68	70
20	9.1	182	180		
25	11.4	228	225		
30	13.6	272	275		
35	15.9	318	320		
40	18.2	364	365		
45	20.5	410	410		
50	22.7	454	455		
55	25.0	500	500		
60	27.3	546	545		
65	29.5	590	590		
≥70	≥32	600	600		

For patients unable to swallow capsules, a liquid suspension (1% in simple syrup) or preweighed aliquots of rifampin powder can be prepared by the pharmacist (see package insert).

MISSOURI DEPARTMENT OF HEALTH AND SENIOR SERVICES

RECORD OF INVESTIGATION OF BACTERIAL MENINGITIS OR BACTEREMIA CASE REPORT

DATE OF REPORT

DATE OF ONSET

PATIENT'S NAME (LAST, FIRST, M.I.)

PARENT'S NAME IF NOT AN ADULT

TELEPHONE NUMBER ( )

ADDRESS (NUMBER, STREET, CITY, STATE, ZIP CODE)

HOSPITAL

PATIENT CHART NO.

PLACE EMPLOYED OR SCHOOL ATTENDED

OCCUPATION

DETACH HERE - PATIENT IDENTIFIER INFORMATION IS NOT TRANSMITTED TO CDC

1. STATE (RESIDENCE OF PATIENT) (1-2)

2. COUNTY (RESIDENCE OF PATIENT) (3-12)

5. HOSPITALIZED? (25) 1 ☐ YES 2 ☐ NO IF YES, DATE OF ADMISSION (26-31) MO DAY YEAR

3. STATE CONDITION I.D. (13-18)

4. CDC I.D. (19-24)

6. DATE OF BIRTH (32-37) MO DAY YEAR

7A. AGE (38-39)

7B. IS AGE IN DAY/MO/YR? (40) 1 ☐ DAYS 2 ☐ MONTHS 3 ☐ YEARS

7C. IF <6 YEARS OF AGE IS PATIENT IN DAYCARE? (41) 1 ☐ YES 2 ☐ NO 9 ☐ UNKNOWN (Daycare is defined as a supervised group of 2 or more unrelated children for >4 hours/week).

8. SEX (42) 1 ☐ MALE 2 ☐ FEMALE

9A. RACE (43) 1 ☐ WHITE 2 ☐ BLACK 3 ☐ AMERICAN INDIAN/ALASKAN NATIVE 4 ☐ ASIAN/PACIFIC ISLANDER 9 ☐ NOT SPECIFIED

9B. ETHNIC ORIGIN (44) 1 ☐ HISPANIC 2 ☐ NON-HISPANIC

10. OUTCOME (45) 1 ☐ SURVIVED 2 ☐ DIED 9 ☐ UNKNOWN

11. PHYSICIAN'S NAME AND TELEPHONE NUMBER

( ) _____

12. TYPE OF INFECTION CAUSED BY ORGANISM (CHECK ALL THAT APPLY)

☐ PRIMARY BACTEREMIA	(46)	☐ CELLULITIS	(50)	☐ SEPTIC ARTHRITIS	(54)
☐ MENINGITIS	(47)	☐ EPIGLOTTITIS	(51)	☐ CONJUNCTIVITIS	(55)
☐ OTITIS MEDIA	(48)	☐ PERITONITIS	(52)	☐ OTHER (SPECIFY)	(56)
☐ PNEUMONIA	(49)	☐ PERICARDITIS	(53)	_____	(57-58)

13. BACTERIAL SPECIES ISOLATED FROM ANY NORMALLY STERILE SITE * (CHECK ONE) (59)

1 ☐ *NEISSERIA MENINGITIDIS*
2 ☐ *HAEMOPHILUS INFLUENZAE*
3 ☐ GROUP B STREPTOCOCCUS
4 ☐ *LISTERIA MONOCYTOGENES*
5 ☐ *STREPTOCOCCUS PNEUMONIAE* * (PNEUMOCOCCUS)
6 ☐ GROUP A STREPTOCOCCUS
8 ☐ OTHER BACTERIAL SPECIES * (SPECIFY: INCLUDE MYCOBACTERIA, FUNGI) _____

* REPORT **ONLY** CSF ISOLATES FOR PNEUMOCOCCUS OR OTHER BACTERIAL SPECIES (60-61)

14. SPECIMEN FROM WHICH ORGANISM ISOLATED (CHECK ALL THAT APPLY)

☐ BLOOD	(62)	☐ PERITONEAL FLUID	(65)	☐ PLACENTA	(68)
☐ CSF	(63)	☐ PERICARDIAL FLUID	(66)	☐ OTHER NORMALLY STERILE SITE	(69)
☐ PLEURAL FLUID	(64)	☐ JOINT	(67)	SPECIFY _____	(70-71)

15. DATE FIRST POSITIVE CULTURE OBTAINED (72-77) MO DAY YEAR

IMPORTANT – PLEASE COMPLETE FOR THE FOLLOWING ORGANISMS

HAEMOPHILUS INFLUENZAE

16A. DID PATIENT RECEIVE *HAEMOPHILUS b* VACCINE? (78) 1 ☐ YES 2 ☐ NO 9 ☐ UNKNOWN IF YES, PLEASE COMPLETE THE LIST BELOW.

DOSE	DATE GIVEN (MO DAY YEAR)	VACCINE NAME/MANUFACTURER	LOT NUMBER
1 (79-84)		(85)	(86-95)
2 (96-101)		(102)	(103-112)
3 (113-118)		(119)	(120-129)
4 (130-135)		(136)	(137-146)

16B. WHAT WAS THE SEROTYPE? (147) 1 ☐ TYPE b 2 ☐ NOT TYPEABLE 9 ☐ NOT TESTED OR UNKNOWN 8 ☐ OTHER (SPECIFY) _____ (148-149)

16C. IF *H. INFLUENZAE* WAS ISOLATED FROM BLOOD OR CSF, WAS IT RESISTANT TO:

AMPICILLIN	(150)	1 ☐ YES	2 ☐ NO	9 ☐ NOT TESTED OR UNKNOWN
CHLORAMPHENICOL	(151)	1 ☐ YES	2 ☐ NO	9 ☐ NOT TESTED OR UNKNOWN
RIFAMPIN	(152)	1 ☐ YES	2 ☐ NO	9 ☐ NOT TESTED OR UNKNOWN

NEISSERIA MENINGITIDIS

17A. WHAT WAS THE SEROGROUP? (153) 1 ☐ GROUP A 2 ☐ GROUP B 3 ☐ GROUP C 4 ☐ GROUP Y 5 ☐ GROUP W135 6 ☐ NOT GROUPABLE 9 ☐ UNKNOWN 8 ☐ OTHER (154-155) (SPECIFY) _____

17B. IF *N. MENINGITIDIS* WAS ISOLATED FROM BLOOD OR CSF, WAS IT RESISTANT TO:

SULFA	(156)	1 ☐ YES	2 ☐ NO	9 ☐ NOT TESTED OR UNKNOWN
RIFAMPIN	(157)	1 ☐ YES	2 ☐ NO	9 ☐ NOT TESTED OR UNKNOWN

SUBMITTED BY (NAME OF AGENCY)

TELEPHONE NUMBER ( )

DATE

RETURN COMPLETED REPORT TO: MISSOURI DEPARTMENT OF HEALTH AND SENIOR SERVICES, SECTION OF COMMUNICABLE DISEASE CONTROL AND VETERINARY PUBLIC HEALTH, PO BOX 570, JEFFERSON CITY, MO 65102.

CONTACTS (HOUSEHOLD AND OTHER)

NAME AND ADDRESS	AGE	SEX	RELATION TO PATIENT	SIMILAR ILLNESS? ONSET DATE	LABORATORY SPECIMEN	DATE COLLECTED	RESULT	CHEMO-PROPHYLAXIS (DOSE & DATE)

FOLLOW-UP NOTES